

ES_QN902x

Errata Sheet QN902x

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Errata sheet

Document information

Info	Content
Keywords	QN902x, errata
Abstract	QN902x errata



Revision history

Rev	Date	Description
0	20181115	Initial draft

Contact information

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1. Introduction

This document describes QN902x errata which should be referred by customer while application development.

2. Errata Overview

Table 1. Errata summary table

Erratum ID	Short description	Product version(s)	Detailed description
E164849	Bond failure on E version chip	'E'	Section 3.1
E164857	Bond failed with 4.2 device under secure connection mode	'D' and 'E'	Section 3.1
E164860	Bond failed when QN9020 configured with resolvable address	'D' and 'E'	Section 3.2
E164914	Added read request indication & read request confirmation	'D' and 'E'	Section 3.4
E166508	Entering hard fault when received packet length longer than max MTU	'D' and 'E'	Section 3.5
E168418	Slave latency not worked	'D' and 'E'	Section 3.5
E168589	Parameter update flag & timer timeout not cleared	'D' and 'E'	Section 3.7
E178621	BLE Pin missing error code not returned to remote device	'D' and 'E'	Section 3.8
E182123	Can't find resolvable bonded device's LTK	'D' and 'E'	Section 3.9
E199029	Bond twice with a bonded device will cause the bonded information losing	'D' and 'E'	Section 3.10

3. Errata Details

3.1 E164849: Bond failure on E version chip

Introduction:

QN902x chips E version would fail to bond with phone easily after receiving bond request.

Problem:

Message handlers missing lead to the size error of variable `gap_default_state_new`, which would cause state switching failure and bond failed accordingly.

Work-arounds:

Restore the values for the missed message handlers, monitor the variable `gap_default_state_new` and set correct value back when error happened.

3.2 E164857: Bond failed with 4.2 device under secure connection mode

Introduction:

QN902x failed to bond with phone when set security level to mode 1 level 4, secure connection mode.

Problem:

Key distribution of both initiator and responder under BLE 4.0 is indicated by 3 bits, any operation to set other bit would be blocked by current firmware. But secure connection has to be indicated by the fourth bit.

Work-arounds:

Restore the fourth bit to default value before firmware checking, re-set the value back after.

3.3 E164860: Bond failed when QN902x configured with resolvable address

Introduction:

QN902x failed to bond with iOS device after being configured as a device with resolvable address.

Problem:

Non-public address is supplied in the key distribution phase when address type is not static random.

Work-arounds:

Distribute public address in the key distribution phase.

3.4 E164914: Added read request indication & read request confirmation

Introduction:

The read attribute value can't be changed by app firmware.

Problem:

There is no handler defined in app level, and no message from stack when there is attribute read value. The app has no chance to set the attribute value.

Work-arounds:

Added message from stack to app firmware, added handler in app firmware to set the attribute value after receiving message from stack.

3.5 E166508: Entering hard fault when received packet length longer than max MTU**Introduction:**

QN902x will enter hard fault when the length of received packet longer than maximum MTU.

Problem:

L2CAP firmware doesn't make the judgement if packet length is longer data buffer.

Work-arounds:

Added judgement firmware which would drop the packet if buffer can't hold it.

3.6 E168418: Slave Latency not worked**Introduction:**

Slave device will be waken up at every anchor point even if the slave latency is not zero.

Problem:

Anchor point calculation has issue when slave latency is not zero.

Work-arounds:

Taken the case of non-zero latency into consideration, re-calculate anchor point.

3.7 E168589: Parameter update flag & timer timeout not cleared**Introduction:**

After parameter update request from slave and disconnection, can't setup connection again.

Problem:

The flag for parameter update and timeout timer is not clear when disconnection.

Work-arounds:

Clear the flag and reset timer in the l2cm task which will be informed when disconnection.

3.8 E178621: QN902x: BLE Pin missing error code not returned to remote device**Introduction:**

Pin missing error code is not returned to remote device, which make phone app hard to tell what happened.

Problem:

Bond info lost in slave side, no pin missing error code returned when there is encryption request.

Work-arounds:

Add handler and message ID to send the error in encryption state.

3.9 E182123: Can't find resolvable bonded device's LTK

Introduction:

SMP can't find LTK of resolvable device after bonding.

Problem:

A wrong address is added to bonded database if the connection device is resolvable device.

Work-arounds:

Adopted IRK instead of resolvable address as record in database for bonding.

3.10 E199029: Bond twice with a bonded device will cause the bonded information losing

Introduction:

Re-bond to a bonded device will cause the losing of bonding info.

Problem:

Bond flag is not cleared to 0 after bonding procedure completed, which caused the failure to store bonding info.

Work-arounds:

Cleared the bonding flag to 0 after bonding procedure completed.

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